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Cultivation of Samples of Vegetatively Propagating Vegetable Crops in Collection Areas

Aliyarov Muhiddin Absamatovich
Research Institute of Plant Genetic Resources, junior researcher
aliyarov_1987@mail.ru
Niyazova Dilnoza Khudaiberganovna
Research Institute of Plant Genetic Resources, laboratory assistant
uma232689niyazov@gmail.com
Toshmetova Komila Nigmatovna
Research Institute of Plant Genetic Resources, laboratory assistant
Kurbanbekova Fatima Tokhmapulatovna
Research Institute of Plant Genetic Resources, laboratory assistant

Annotation: The article presents the results of the research carried out in order to update and restore the fertility of the collection samples of sweet potato (Ipomoea batatas), Jerusalem artichoke (Helianthus tuberosus) and garlic onion (Allium sativum) belonging to vegetatively reproducing vegetable crops stored in the gene pool.

Key words: Genetic resources, gene pool, crop samples, vegetative organs, population.

Introduction. The importance of the genetic resources of agricultural crops and their effective use is increasing in the following years, especially in connection with global climate change and food security of the people. The increase in air temperature, the frequent return of crops, the shortage of irrigation water, the expansion of saline lands, and the rapid spread of diseases and pests over large areas sharply reduce the productivity of plants. In this case, breeders are faced with new tasks - to improve and improve the set of agricultural crops, to create varieties adapted to new conditions, and to develop technologies for cultivation. To create new varieties, it is necessary to provide breeders with new primary materials. Plant gene pool and world collections of agricultural crops are a source of primary materials with valuable economic traits and play an important role in the creation of new varieties.

Research methods and methods. Due to the variety of crops, studies were carried out according to the guidelines for each species. Since the work carried out on the gene pool has its own characteristics, it was developed in the institutes of plant genetic resources of foreign countries (Methodology of the State variety testing of agricultural crops. M., Kolos, 1975., VIR guidelines for the study of the world collection of pepper. 1977.) instructions were used. To update the samples of each species collection, sowing of seeds was carried out at the optimal planting time. Propagation of seeds of cross-pollinated plants was carried out in separate places or in isolation cabins.

In the reproduction of the vegetative organs of the collection samples, no selection was made, except for the removal of plants damaged by mechanical disturbances, diseases and pests, because according to the method, the population should be kept in its original form. In order to preserve all biotypes included in the population of cross-pollinated crop samples, their vegetative organs were collected from at least 30-50 plants, depending on the crop and variety, during reproduction.

Research results. 164 samples of perennial vegetable crops are kept alive at the Scientific Research Institute of Plant Genetic Resources, including sweet potato (Ipomoea batatas) - 1, Jerusalem artichoke (Helianthus tuberosus) - 2 and garlic (Allium sativum) 160 (Table 1)

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Table 1
Keeping vegetatively propagating crop species alive (O'GRITI, 2021)

Crop types	Number of samples				
	plan	fact	against the plan	number of specimens kept alive	against the plan
Perennial vegetable crops					
Batat - *Ipomoea batatas*	2	2	-	2	-
Jerusalem artichoke - *Helianthus tuberosus*	2	2	-	2	-
Garlic onion - *Allium sativum*	160	160	-	160	-
Total:	***164***	***164***	**-**	***164***	**-**

Sweet potato Ipomeae batatas- sweet potato- originates from Mexico and Central America. It is a tropical and subtropical plant and produces a large number of tubers. It is planted in large areas in Indonesia, Japan, China, India and other countries. It is one of the main crops in Japan. Sweet potato fruits are eaten in various forms and flour is also made from them. Its fruits have much higher starch and sugar content and calories than ordinary potatoes. The fruit also contains a certain amount of inulin. The sweet potato is a perennial plant with long stems and a prostrate habit. It was once planted in Uzbekistan, but the processing and consumption of sweet potato tubers has not been fully studied. In March, sweet potato tubers are planted in greenhouses and seedlings are grown. Seedlings are ready in May and planted in the field at the end of June. A sweet potato planted on an area of 20 m2 is considered sufficient for reproduction. This year, sweet potato plants were watered 5 times, fed with fertilizer (urea) 2 times. Sweet potatoes are harvested at the end of October and beginning of November. Batat is resistant to cold. Until spring, the air temperature is kept in rooms not lower than 0°C, and next year this process will be repeated.

Jerusalem artichoke (Helianthus tuberosus) is a perennial plant. In the wild, it is common in North America, especially in the USA. Its tubers contain more than 11.0% inulin. Jerusalem artichoke is widely used in the confectionery industry. Important in agriculture, Jerusalem artichoke is grown as fodder in many countries. It grows well in different soils and gives abundant harvest. 2 varieties of Jerusalem artichoke were created at the Institute of Plant Sciences and included in the State Register - "Mo'jiza" and "Fayz-baraka". To preserve Jerusalem artichoke samples and obtain reproduction, each sample is planted on a 10 m2 area. Rows are sown at 70 cm spacings and dug up in early spring and thinly planted.

Garlic onion (Allium sativum) - 160 specimens of it are kept alive. Yellow onions with specific biological characteristics are planted in the autumn months, 2-3 months after harvesting. In the reporting year, it was planted in October 2019. It was not damaged during the winter months. 2020 garlic onion plantation was fed with mineral fertilizers, watered regularly, treated 3 times between rows. At the end of June, the crop was harvested and cleaned. The purity of the variety was determined. Onion heads that did not belong to a particular variety were removed. On September 20-22, garlic and onions were planted in the field in a 70 x 10 scheme. For each variety, 5 meters of egat is sufficient for the reproduction of the variety. Watered after planting. In the winter months, the soil is maintained by less watering. Onion heads are mulched with rotted manure.

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